AMENDMENTS TO THE CLAIMS

1. (Original) A spectral reflectance sensor for determining the reflectance of a plant comprising:

a housing;

a light source housed in said housing, said light source projecting light of a predetermined wavelength;

a reflected light receiver including:

a first photodetector positioned to receive reflected light originating from said light source

ambient light compensation means for reducing the effects of ambient light on said first photodetector; and

a first output;

a direct light receiver including:

a second photodetector positioned to receive incident light from said light source; and

a second output;

a discriminator for distinguishing the light originating from said light source and reflected by a plant from ambient light; and

a microprocessor having an input for reading said first output and an input for reading said second output,

wherein the reflectance at said predetermined wavelength is proportional to the quotient of the value of said first output divided by the value of said second output.

Claims 2-11 (Canceled)

12. (New) A height independent spectral reflectance sensor for determining the reflectance of a plant comprising:

a housing;

a linear lens housed in said housing;

a light source including a plurality of light emitting diodes configured in a row parallel to, and directed to emit light through, said linear lens to illuminate an area; and

a photodetector positioned receive said light reflected from said illuminated area.

13. (New) The height independent spectral reflectance sensor of claim 12 further comprising a parabolic reflector positioned to receive light reflected from said illuminated area and focus said light at a focal points, said photodetector positioned to receive the light at said focal point.

14. (New) The height independent sensor of claim 12 further comprising a microprocessor wherein said light source is selectively activated and deactivated under the control of said microprocessor and said photodetector is in communication with said microprocessor such that said microprocessor can read the reflected light received by said photodetector.

15. (New) An array of reflectance sensors comprising:

a plurality of sensors, each sensor comprising:

a linear lens;

a light source including a plurality of light emitting diodes configured in a row parallel to, and directed to emit light through, said linear lens to illuminate an area; and

a photodetector positioned receive said light reflected from said illuminated area; and

a microprocessor , wherein said light source of each sensor of said plurality of sensors is selectively activated and deactivated under the control of said microprocessor and wherein said photodetector of said each sensor is in communication with said microprocessor can read the reflected light received by said photodetector.

16. (New) The array of reflectance sensors of claim 15 wherein the resolution of said each sensor is defined by the field of view of said photodetector of said each sensor and wherein said microprocessor can be configured to selectively group the readings from at least two of said photodetectors such that the resolution of the array of reflectance sensors is programmable.

17. (New) The array of reflectance sensors of claim 15 wherein said microprocessor compares the reflected light read from a particular photodetector with the reflected light read from the other photodetectors to identify pest infestation within the field of view of said particular photodetector.

18. (New) The array of reflectance sensors of claim 15 wherein said microprocessor compares the reflected light read from a particular photodetector with the reflected light read from the other photodetectors to measure plant spacing.

19. (New) The array of reflectance sensors of claim 18 wherein plant properties are sensed relative to the soil surface are occupied by the plant.

20. (New) The array of reflectance sensors of claim 15 wherein said microprocessor compares the reflected light read from a particular photodetector with the reflected light read from the other photodetectors to identify changes in the soil background within the field of view of said particular photodetector.

21. (New) The array of reflectance sensors of claim 15 wherein said microprocessor further includes memory and an image of area sensed by said photodetectors is stored in said memory.